

REMARKS

Reconsideration of this application and the allowance of rejected claims 1-3 and 5-7 are respectfully requested. Applicants have attempted to address all grounds for rejection in the Office Action dated October 20, 2009 (Paper No. 20091014) and believe that the application is now in condition for allowance. The claims have been amended to more clearly describe the present invention.

Claims 1, 3, and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent No. 6,066,598 to Ishikawa et al. and U.S. Patent No. 5,834,405 to Ahn et al. Applicants disagree with and traverse this rejection for the following reasons.

Ishikawa discloses a superconducting multilayer electrode including alternating superconductor layers 1, 2, 3, 4 and 5, and thin-film dielectric layers 30-1, 30-2, 30-3 and 30-4 laminated with each other on one side of a dielectric substrate 10 as shown in Fig. 1. The superconductor layer 5 is formed on the substrate 10 and then the dielectric layers and superconductor layers are alternately laminated thereon.

Ahn discloses a superconducting multilayer ceramic substrate that is prepared by connecting at least one metallic conductor embedded in a ceramic dielectric oxide before establishing a superconducting oxide reaction layer at intervals between the ceramic material and at least one metallic conductor.

In contrast, amended claim 1 recites, among other things, a method for producing a superconducting inductive component that includes the steps of “depositing an

insulating film directly on a substrate and depositing a stack of alternately superconducting and insulating films comprising at least one line segment incorporating at least one terminal of the component on said insulating film, said line segment including one of a conducting layer and a superconducting layer.” The combination of Ishikawa and Ahn fails to disclose or suggest such subject matter.

As stated above, Ishikawa discloses a superconducting multilayer or electrode including alternating superconductor layers and thin-film dielectric layers (i.e., insulating layers). As shown in Fig. 1, the bottommost layer of the stack is a superconducting layer 5 that is directly deposited on the substrate 10. In fact, Ishikawa specifically states that “a superconducting multilayer electrode is formed on the top surface of a dielectric substrate 10 having a ground conductor 11 formed on the bottom surface thereof so as to come into contact with a thin-film superconductor 5 which is the bottommost layer” (Col. 3, lines 59-63). The electrode is structured this way to form a TEM mode microstrip line LN10. Ishikawa therefore fails to disclose a superconducting component on which an insulating film is deposited directly on a substrate and then a stack of alternatively superconducting insulating films are deposited on that film as recited in amended claim 1.

Ahn does not remedy the deficiencies of Ishikawa. Ahn discloses a superconducting multilayer ceramic substrate and a method for producing that substrate. Ahn does not disclose or suggest depositing an insulating film directly on that substrate or depositing a stack of alternatively superconducting and insulating films on the substrate. Clearly, Applicants’ submit that amended claim 1, and the claims that depend therefrom, are

each patentably distinguished over the combination of Ishikawa and Ahn and in condition for allowance.

New claim 32 depends from amended claim 1 and recites, among other things, that “the superconducting inductive component operates at a high inductance that is obtained at frequencies equal to or less than 2000 Hz.” (The subject matter of this claim is supported in Fig. 6 and on page 8, line 15 through page 9, line 2.) Thus, the component produced by the method described in amended claim 1 has a high inductance that is obtained at very low frequencies.

Ishikawa, on the other hand, is directed a superconducting multilayer electrode for use in high-frequency bands including microwaves, decimillimetric waves, or millimetric wave, for use in devices such as high-frequency transmission lines, resonators and filters (Col. 1, lines 7-12). For example, the superconducting material described in Ishikawa is for use in a microwave frequency band of 10 Hz.

Ahn describes a superconducting substrate formed by embedding a metallic conductor in a ceramic dielectric oxide. The substrates are intended for use supercomputers that operate in a standby mode at normal operating temperatures. Also Ahn operates at frequencies that are consistent with computer boards, i.e., approximately 400 MHz. The components disclosed by Ishikawa and Ahn are therefore meant to operate at frequencies that are significantly greater than the frequencies of the components disclosed in new claim 32. Accordingly, Applicants submit that new claim 32 is patentably distinguished over the combination of Ishikawa and Ahn and in condition for allowance.

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Ishikawa, Ahn and “IEEE Transactions on Magnetics,” 27:1365-1368 (1991) to Lee et al. Applicants disagree with and traverse this rejection for the following reasons.

Claim 2 depends from amended claim 1. As stated above, the combination of Ishikawa and Ahn fails to disclose or suggest the subject matter of amended claim 1. Lee fails to remedy the deficiencies of Ishikawa and Ahn. Therefore, Applicants submit that claim 2 is patentably distinguished over the combination of Ishikawa, Ahn and Lee for at least the reasons provided above and for the further reasons that the cited combination fails to disclose or suggest the subject matter of claim 2 in combination with the subject matter of amended claim 1.

Claims 6 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Ishikawa, Ahn and U.S. Patent No. 5,219,827 to Higaki. Applicants disagree with and traverse this rejection for the following reasons.

Claim 6 depends from amended claim 1. Claim 7 depends from claim 5 which depends from amended claim 1. As stated above, the combination of Ishikawa and Ahn fails to disclose or suggest the subject matter of amended claim 1. Higaki fails to remedy the deficiencies of Ishikawa and Ahn. Therefore, Applicants submit that claims 6 and 7 are each patentably distinguished over the combination of Ishikawa, Ahn and Higaki for the reasons provided above and for the further reason that the cited combination fails to disclose or suggest the subject matter of claims 6 and 7 in combination with the subject matter of amended claim 1.

In view of the above remarks, the application is respectfully submitted to be in allowable form. Allowance of the rejected claims is respectfully requested. In the alternative, the claims are placed in a better form for appeal. Should the Examiner discover there are remaining issues which may be resolved by a telephone interview, he is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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